

**CLAIMS**

1. A power factor controller or corrector in a regulated power supply circuit, which comprises separating load and line regulations in the power supply circuit and providing a  $1/x^2$  modulator module for the line regulation in which switching frequency is inversely proportional to the square of the line voltage.
- 5 2. A power factor controller or corrector according to claim 1, in which the load regulation is achieved by a  $1/v$  pulselwidth generator which generates a pulse duration that is inversely proportional to the voltage from a differential gain circuitry that produces a control voltage which is proportional to the difference between a fraction of output voltage and a fixed reference voltage.
- 10 3. A power factor controller or corrector according to claim 2, in which a loop delay is provided between the differential gain circuitry and the  $1/v$  pulse generator.
4. A power factor controller or corrector according to claim 1, 2 or 3, combined with a hybrid power supply having a  $1/x$  frequency modulating module, said combination comprising cascading the  $1/x^2$  module with the  $1/x$  module.
- 15 5. A power factor controller or corrector according to claim 4, in which the hybrid power supply is as disclosed and claimed in U.S. Patent No. 5,357,418 which is incorporated herein by reference.